

Application No. 09/697,418
Filed: October 26, 2000
TC Art Unit: 1732
Confirmation No.: 5372

REMARKS

Reconsideration of the application, as amended, is respectfully requested. All objections and rejections are respectfully traversed.

Claims 1 and 2 are pending in the application and are rejected under 35 USC § 103(a) as being unpatentable over Takeuchi in view of Collette et al. Claim 2 is objected to as being unpatentable as being dependent from a rejected base claim but would be allowable if rewritten to include the limitations of claim 1. Accordingly, the Applicant has amended claim 1 to include some of the limitations of claim 2. In particular, claim 1 now includes the body portion being formed in a conical shape in which the body portion is made thicker than the mouth portion and in which the diameter of the body portion is gradually decreased towards the bottom portion.

The Examiner relies upon Takeuchi to teach orientation blow molding, and upon Collette to teach stretch blow molding in particular. The Examiner has determined that neither Takeuchi nor Collette teach or suggest a method of injection stretch blow molding wherein the neck portion of a preform is cooled and solidified, stretching the body portion to 10 mm and then stretch blow molding the preform.

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The Applicant concurs with this understanding of the prior art in general and Collette in particular as far as it goes. However, the Applicant respectfully asserts that Takeuchi does not teach or suggest at least one claimed features of claim 1. In particular, the Applicant believes that Takeuchi fails to teach that the body portion is formed in a conical shape in which the body portion is made thicker than the mouth portion as claimed in claim 1. In addition, the Applicant believes that Takeuchi fails to teach or suggest the diameter of the body portion is gradually decreased towards the bottom portion and that the body portion is formed by gradually decreasing its wall thickness from a connecting portion also as claimed in claim 1.

Furthermore, the Applicant believes that Collette fails to teach or suggest the use of two stretching steps: a preliminary stretching step and a standard stretching step in a stretch blow molding operation. In addition, the Applicant believes that Collette teaches away from the claimed invention by teaching the use of two reheating steps and a single stretching step within the stretch blow molding operation.

Collette teaches a method of stretch blow molding in which the preform is reheated twice in order to achieve the desired temperature profile in the preform walls. Collette first

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describes the effects of two different heating systems on a preform. According to Collette, a quartz heater is used to heat the outside surface of the preform 10 and a radio frequency heater is used to heat the interior surface of the preform 10. In addition, Collette teaches the use of a combination of quartz and radio frequency heaters to obtain a uniform temperature profile throughout the wall of the preform. See Collette, col. 2 lines 50-60.

Collette then teaches a method of stretched blow molding in which the first reheating step is accomplished using quartz heater to heat the outside of the preform and the second reheating step is accomplished using radio frequency heaters to heat the interior of the preform. In this way, as the preform is allowed to cool to achieve a temperature equilibrium, a nearly constant temperature profile is achieved across the preform wall throughout the entire preform, i.e., the neck finish portion 16, the neck to body transition portion 18, body portion 14, and the bottom part 40 prior to stretching the preform. See Collette, col. 3 line 65-col. 4 line 15. Thus, in Collette, the two reheating steps are used to prepare the preform for stretch blow molding to ensure that the preform is sufficiently malleable to be molded.

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In contrast, claim 1 states: "releasing the preform from the injection mold in a state where the inside thereof is still in a high temperature while holding the mouth portion of the preform which is cooled and solidified with a lip mold." Thus, the mouth portion is cooled and solidified and inside is maintained in a high temperature, but the outside is allowed to cool. Accordingly, Collette teaches the use of two reheating steps to achieve a nearly constant thermal profile throughout the entire preform. Thus, Collette teaches away from the claimed invention where the neck portion is allowed to cool and solidify and where the inside of the preform is maintained at a high temperature, but where the outside is not. Thus, there is not a constant temperature profile as required in Collette.

In fact, it is because there is no reheating of the preform, as in Collette, that the preliminary stretch step is needed. As discussed in the specification, the stretch blow molding is carried out after the preform temperature is cooled to a predetermined orientation temperature. During this cooling period, the temperature of the upper body portion is cooled to a temperature lower than the other body portion 3 due to the lip mold 7 and the blow mold core 9. As a result, stretching the preform in the stretching blow mold step would be difficult. To

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avoid this problem, the claimed invention performs a preliminary stretching operation as the preform cools to the orientation temperature, but before the upper body portion has excessively cooled. See the instant application, page 8 line 21-page 9 line 10.

Thus, in contrast to the teachings of Collette, in the claimed invention there are two stretching operations. The first is the preliminary stretching step that occurs after the transfer of the preform to the stretching blow mold during a cooling period and the second is associated with the conventional stretch blow molding of the preform.

In addition, in contrast to the claimed invention, Collette describes the shape and thickness profile of the preform in col. 2, lines 34-40 and Figs. 5 and 6 and the shape and thickness of the preform after elongating by rod 44 are shown in col. 4 lines 42-63 and in Figs. 7 and 8. These descriptions are in contrast to claim 1 which states: "wherein the body portion is formed in a conical shape in which the body portion is made thicker than the mouth portion and the diameter of the body portion is gradually decreased towards the bottom portion and the body portion is formed by gradually decreasing its wall thickness from a connecting portion towards the bottom portion." Furthermore,

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after the preliminary stretching, claim 1 clearly states that:
"thereby thinning a wall thickness of the upper body portion."

For the reasons set forth above, the Applicant asserts that independent claim 1 is patentably distinct over the prior art either alone or in combination and respectfully requests the reconsideration and allowance of these claims. Claim 2 depends from claim 1 and is patentable for at least the same reasons as claim 1.

In view of the foregoing remarks and amendments, the Applicants respectfully submit that all present claims and the Application are in condition for allowance and such action is respectfully solicited.

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The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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